Message

From: Chernoff, Neil [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=E2C8B0A1AA0347F7AB9245A7A5F28DE1-CHERNOFF, NEIL]
Sent: 2/22/2019 9:31:24 PM
To: Russell, Marc [/o=ExchangeLabs/ou=Exchange Administrative Group (FYDIBOHF23SPDLT)/cn=Recipients/cn=23cf7fd7675c4ac5a899e5b561c88146-Russell, Marc]
Subject: SHC Research project on simultaneous exposures of microcystins and PFAS

Hi Marc,

Thanks for taking the time to explain things to me today. The following is a short paragraph on the Project that we've begun on the potential of simultaneous exposures to two liver toxins (microcystin-LR) and PFAS (Nafion Byproduct 2) to produce types and extents of toxicity that are not predictable from the responses to individual toxins:

Poly- and per-fluoroalkyl substances (PFAS) that human populations are exposed to include Nafion byproduct 2 (NBP2) and other PFAS in the perfluoroethercarboxylic acid (PFECA) group. Microcystins (MCs) and PFAS have similar general chemical structures, target the liver, and are actively transported directly into liver cells by the same types of organic anion transporter polypeptides (OATPs). NBP2 has been identified in the serum of people living in areas of eastern North Carolina and algal blooms that produce microcystins are common on the same areas, so simultaneous exposures have a high probability of occurring. Both classes of compounds induce similar types of liver toxicity including increased liver size, fat deposition, and the occurrence of serum enzymes indicative of hepatic cell damage. Both compounds are known to bioaccumulate in the liver. Differential gene expression data, however, indicates that different genes are activated or inhibited by MCs and PFAS, indicating that the mechanisms by which these compounds induce similar types of liver toxicity are different, and their potential interactions affecting general liver function are important to evaluate.

If you need any more information, let me know.

Neil